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ABSTRACT

Walking behavior was established in a 20-month-old Down's Syndrome girl by a parent trained in behavior analysis. During a series of 7-minute sessions, the child was given edible reinforcement for taking unsupported steps between two chairs which were gradually moved from 18 to 70 inches apart. In three final generalization sessions, the chairs were removed and the child was reinforced for walking unsupported from one parent to the other. Walking was firmly established with a total expenditure of 3 hours, 9 minutes time. Benefits of the procedure included the involvement of a minimum of time and preparation and the use of family members as teachers. (LS)

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ESTABLISHING WALKING RESPONSES IN A TWENTY-MONTH OLD CHILD BY A PARENT TRAINED IN BEHAVIORAL ANALYSIS

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ESTABLISHING WALKING RESPONSES IN A TWENTY-MONTH OLD CHILD BY A PARENT TRAINED IN BEHAVIORAL ANSLYSIS

Alice Angney

Walking behavior for a young child not only is desirable for the parents' health and peace of mind as the child grows in size, but is also an enabling objective for the necessary self-care skill of independent toileting and provides expanded opportunities for interaction with the environment.

This study was undertaken by a parent trained in behavior analysis in an effort to establish walking behavior in a twenty-month old Down's Syndrome girl. The average age for a normal child to start walking is eleven to fourteen months and for a Down's child it is three years.

The major aim of the study was to develop a procedure that would demand a minimum of time and preparation and involve only the family members. In addition, a simple and effective procedure could be easily taught to and used by other parents.

Subject

The child in this study was a twenty-month old nonwalking girl whose chromosome study indicated Down's Syndrome. Amy would be described as slight in body build, 18½ pounds and 30 inches tall, but otherwise of fairly normal physical development. One of the characteristics of a Down's Syndrome child is poor muscle tone, and because of this, Amy's family had exercised

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her legs and arms since birth. She received swimming lessons through the summer to improve muscle tone.

Amy's family had walked her many hours holding onto her hands, and she had a "walker" in which to practice. She was able to pull herself up and walk holding onto a stable object, but when stood up and left unsupported, she would sit immediately. All efforts to coax her to leave the stable object and take an unsupported step were futile.

A doctor's examination that included pelvic and leg x-rays revealed no physical abnormalities that would prevent walking.

Procedures

The procedures used are an adaptation of the procedures used by Meyerson, Kerr and Michael (1967).

Two chairs were placed facing each other with the parents sitting straddling them. At the first session, the chairs were placed 18 inches apart, just room enough for Amy to stand holding onto the chairs and moving from one chair to the other without ever having to let go. When Amy was positioned between the chairs, the parent behind her would say, "Amy, come here." If the command was followed, she was reinforced with an edible. If the command was not followed, a reinforcer was not given. The parents alternated giving the command until Amy was effectively making the transfer from one chair to the other.

As soon as this response had been established, the distance between the chairs was gradually increased until Amy had to move from one chair to the other without being able to hold on to

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either chair. At first she was able to let go of one chair and, standing unsupported, lean over and hold on to the other chair with her other hand. As the distance between the chairs increased, Amy was forced to take unsupported steps between the chairs in order to receive the reinforcer.

The chairs were moved gradually apart during each session. The greatest distance between chairs reached in one session was the starting distance for the next session. The distance between each chair was 70 inches in the final session.

At this point in the procedures, Amy had taken 162 unsupported steps in one session and the chairs were removed. One parent held Amy's hand and the other parent stood facing Amy with the reinforcer in his hand and repeated the command, "Come here, Amy." When Amy let go of one parent's hand and walked unsupported toward the other parent, she was reinforced.

At any time during the entire procedures, if Amy sat down or dropped to her hands and knees and crawled, she was held up and walked back to where she had started from and no reinforcer was given.

The generalization procedures described above were only carried out for three sessions, as the walking behavior at this point generalized to the regular daily mobility pattern.

Each session was seven minutes long. A regular kitchen timer was set for this time at the start of each session. This time was used so that the whole procedure including setting up the chairs and getting out the reinforcer would take no more than 10 minutes.

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The number of times the child alternated between parents during the seven minutes was recorded with a tally counter by counting the number of times reinforcement was given. The cumulative number of unsupported steps was counted and recorded on a tally counter for the same seven minute period. This was accomplished by one parert counting the reinforcements and the other parent counting the steps. Reliability counts were taken at least every seventh session and were always well within the 90% range.

Results

The results are shown in Figure 1. As can be seen on the graph, Amy took no unsupported steps for the first six sessions but she was making from 12 to 2. transfers during this time. In sessions 7-24, for a total of 126 minutes, Amy took a cumulative number of 1481 unsupported steps.

During the three sessions of generalization, Amy took 500 unsupported steps.

Within one week of the final session, Amy's primary means of locomotion was walking.

Discussion

This study was a family project done in the child's own home with her parents as the experimenters. The reliability was carried out (with the exception of one session where it was done by adults) by the subject's six and eight-year-old sisters.

One of the reasons for the study was to see if a shaping procedure of this nature is feasible to be used in the home as a developmental approach rather than a rehabilitative procedure

FIG. 1 NUMBER OF INDEPENDENT STEPS TAKEN BY AMY

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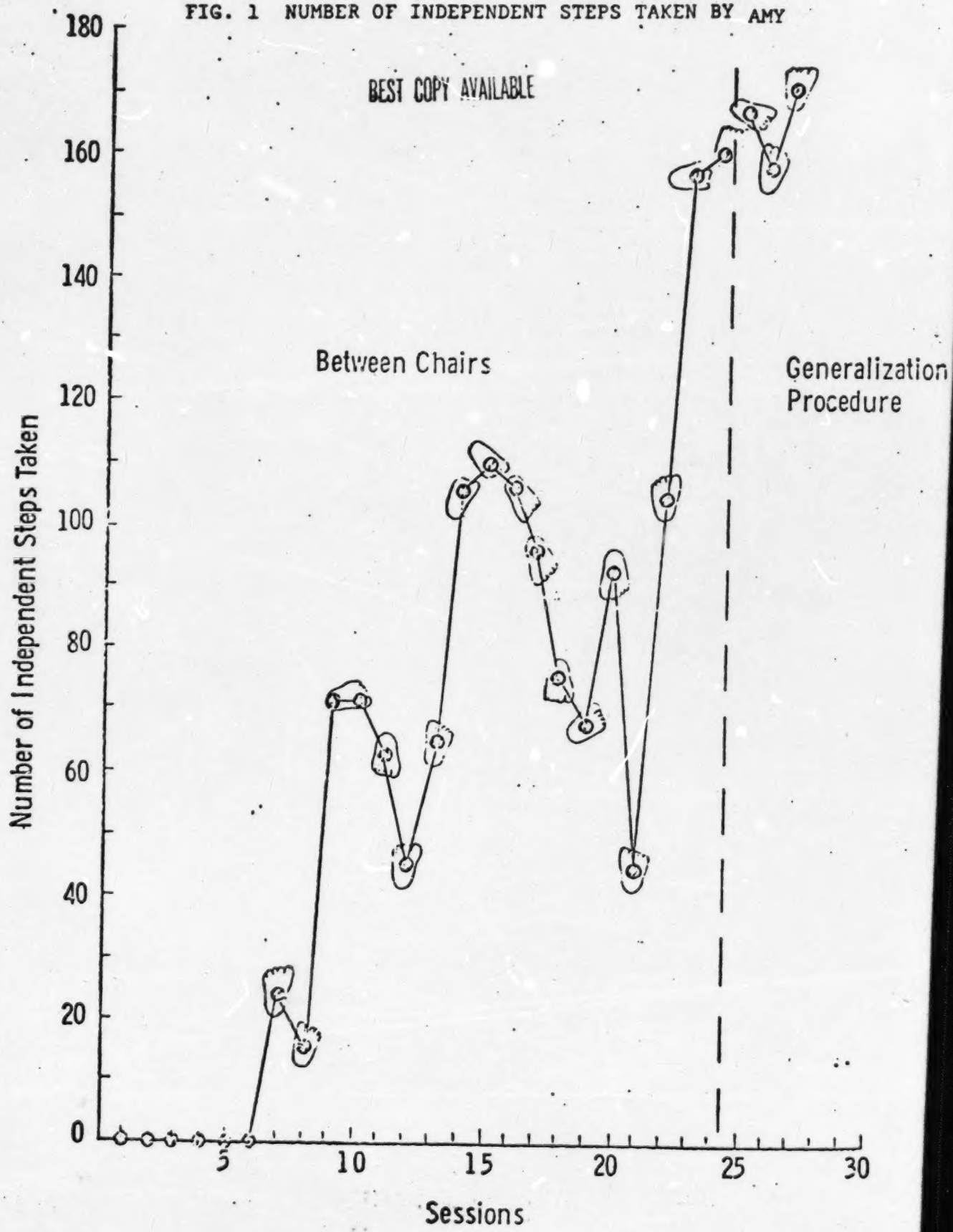

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as in the Meyerson, Kerr and Michael study (1967).

Walking was firmly established with a total expenditure of three hours and nine minutes time.

References

Meyerson, Lee, Kerr, N., Michael, J. L. "Behavior Modification in Rehabilitation" In Child Development: Readings in Experimental Analysis, S. Bijou and D. Baer (Eds.) Appleton-Century-Crofts, 1967.